

ABSTRACT

A preamplifier having extremely high input impedance amplifies the electrical signal output from an electret condenser microphone (ECM) without suffering from the effects of a DC leakage current at the input. The preamplifier circuit includes a pair of cross-coupled PN junction diodes setting the input impedance, a PMOS device, and a load resistor configured similarly to a conventional preamplifier. A capacitor is placed between the input and the cross-coupled diodes such that a DC path no longer exists to bias the cross-coupled diodes. Therefore, leakage currents are prevented from upsetting the DC operating point of the preamplifier and biasing the cross-coupled diodes. Consequently, small signal gain distortion, excessive demodulation products and increased noise can be avoided.